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SOPHIOLOGY, OR THE SCIENCE OF ACTIVITIES DESIGNED TO GIVE INSTRUCTION

By J. W. POWELL

Sophiology is the science of instruction. I shall treat the subject under two rubrics: first, the nature and origin of the opinions which are inculcated by instruction, and, second, the agencies of instruction.

OPINIONS, OR THE SUBJECT-MATTER OF INSTRUCTION

Opinions are about particles severally or about them conjointly as they are organized into bodies. Particles thus considered are found to have essentials, relations, quantities, properties, and qualities. There are no essentials without relations, no relations without quantities, no quantities without properties, and no properties without qualities, for the world is concrete and there is nothing abstract but in consideration. Essentials, relations, quantities, properties, and qualities we call categories.

When the world is looked upon as concrete, and bodies are discovered, it is found that every one is composed of a group of bodies; but to express the fact without confusion it is better to say that a body is a group of particles, for when one body is considered as a constituent of another it promotes clear statement to say that the compound body is composed of particles. Ultimate particles have never been reached by analysis unless it be in the ether.

Concepts grow as the products of thought. The stream of thought is composed of instantaneous and successive judgments, some of which are duplicated and endlessly reduplicated. While mentations arise from sense impressions, like sense impressions are oftentimes repeated and by association past mentations are revived, so that there is a vast repetition of the instantaneous judgments as they follow on through the stream of mental life.

It is thus by repeated and revived mentations as judgments that concepts or notions arise. These notions constitute opinions. We cannot make a complete consideration of opinions without considering their origin in the compounding of judgments into concepts.

While opinions often change, they are not necessarily born to die. Correct opinions developed in the individual and propagated from man to man become immortal, while only incorrect opinions ultimately die; but the vast body of opinions as they arise from moment to moment are born only for an ephemeral life. Of those that have appeared upon the stage of history because they have been accepted by the great thinkers, it remains to be said that still the many die and the few live. While they live they are esteemed as science, when they die they are esteemed as errors; hence sophiology can be defined as the science of opinions, and their classification as errors or truths when accepted as such by the leaders of human thought, together with the methods of discovering and propagating such opinions.

We are now to consider how opinions originate and change. For this purpose we will consider them in groups in the order in which they were developed by mankind. These groups fall into five rubrics: animism, cosmology, mythology, metaphysic, and science. Animism, which is the belief in ghosts, first prevailed. We will, therefore, consider this subject first. For the original formulation of this doctrine we are indebted to the great ethnologist Edward B. Tylor.

The science of ethnology teaches the nature and origin of the ghost theory; that is, it discovers the nature of ghosts and explains how men come to believe in them. There are many people who believe in ghosts, the opinion being a survival from primitive society; but with tribal men the belief is universal. Ethnology also teaches the nature and origin of primitive cosmology, which has now become discredited, though vestiges of it exist in the opinions of simple folk, when it is called folklore. I have previously set forth the nature and origin of animism and cosmology.

MYTHOLOGY

Heretofore in treating of the fundamental processes of psychology the nature of consciousness, inference, and verification have been set forth. Inference alone may and often does result in error, while truth is assured only by verification. Every judgment involves a consciousness and an inference; and if the judgment is valid, its validity can be established and known only by verification. The repetition of an erroneous judgment is often confounded with verification, and thus men come to believe in fallacies. Of the multitude of errors in judgment those most often repeated by mankind, and especially those which have been coined by the leaders of thought, are those which are woven into mythology. Though we have a criterion by which to distinguish true from erroneous judgments, still judgments are compounded into notions that ultimately are exceedingly complex, and it is often found difficult to resolve notions into their constituent judgments; so that while there is an infallible criterion, it is not easily applied. We are not here dealing with the whole subject of psychology, but only with the leading concepts which distinguish science from mythology. That history of opinions which is often called the history of philosophy (but which is mainly the history of metaphysic), together with the history of science, gives us the data of what is here called *sophiology*. Science has already cost a vast amount of research, and we may safely prophesy that only a beginning has been made. It would be an inane proceeding to attempt to forecast what research will ultimately unfold, but perhaps it would not be unprofitable to review in outline the characteristics of the fundamental errors of mankind in so far as they have already been detected.

False inferences primarily arise through referring sense impressions to wrong causes. A term is needed for this error, and it will be called *imputation.* Imputation, then, is the reference of a sense impression of which the mind is conscious as an effect, to a mistaken cause. This wrong cause may be a wrong body or it may be a wrong property.

Let us now see if these two propositions can be made plain. The savage hears the thunder and infers that it is the voice of a bird. This is imputing a sound to a wrong body. Birds have voices, and not knowing the cause of the thunder, the savage imputes it to a bird; but as he knows of no bird with such a voice, he imagines a new and unknown bird. Thus an imaginary bird is created as the explanation of thunder. The creation of imaginary things to explain unknown phenomena is mythology. Thunder may be interpreted as the voice of a bird in such manner by many people until it falls into common speech; thus an imaginary thunder-bird may become the theme of much thought and much talk, and at last a number of stories may grow up about it. The barbarian who drives a span of horses to a war chariot becomes accustomed to its rattle and compares it to thunder. Then the thunder itself is symbolized as the rattle of the chariot of the storm. In this case a new imaginative being is created—a storm god with his chariot in the clouds. So the reference of an effect to an erroneous cause results in a myth.

There may be many analogies called up by the noise of thunder, and there may be many myths established in such manner; but it is manifest that none of them can be verified. In the course of the history of verification, which is the history of science, an hypothesis as to the cause of thunder may be verified; when such verification is reached, all myths relating to thunder die as notions, and the scientific concept is established. All false philosophy, that is, all erroneous explanation, must necessarily lack verification. It may be believed and become current in the philosophy of a people or of a time, and this current belief may be held as science; but sooner or later an erroneous notion, however widely believed, will present some incongruity to the developing concepts of mankind and will challenge such attention that new hypotheses will be made to be examined until one is verified. When the verification comes, science is born, and the old notion is relegated to mythology. Philosophy is the explanation of causes; whatever else may be involved in the term, this must be involved. It is the central point in philosophy, though not the whole of philosophy. We may now make a definition of the growth of science and the discovery of error. Research, by which science grows, is the verification of hypotheses and the elimination of incongruous notions, and such discarded notions as have been previously and generally received as science are relegated to mythology. Let us illustrate with another example.

Conceive a people in such a primitive stage of culture as not to know of the ambient air. Such people have existed and some even yet exist. In all that culture known as savagery this fact is unknown. The air is unseen; but it often has corporeal motion, and is then called wind, and this wind produces effects. Blow upon your hand, or invigorate the fire with your breath, and then contemplate the wind among the trees: How like the breath is the wind! Now impute the north wind to some great monster beast, and you do only that which millions of people have done before. Many savage peoples explain the winds in this manner, imputing them to monster beasts. In this instance, and in ten thousand others that can readily be supplied, the error of imputing an effect to the wrong cause as a wrong body results in the creation of imaginary bodies, which is the essence of mythology.

When air is unknown there are other things besides breath which the wind suggests. You can blow the fire with a basket tray, and you can fan your brow with an eagle's wing. So the wind suggests a fanning, and may be explained in this manner. But what is it that fans? A bird with wings. If the wind fans it must be accomplished by some great sky-bird. The myths of such sky-birds are common. After this manner a host of imaginary animals are created.

To the wildwood man, who roams the prairie and haunts the forest, the world is the grand domicile of beasts. Beasts are men, and men are but beasts. To his mind the beasts are rather superior to men. The beasts have more magical power and hence are often immeasurably superior to human beings. The savage admires the superiority of the beast and longs for his activities; he is forever contemplating the accomplishment of beasts — the wonders which they can perform — and is envious of their skill in what he supposes to be magic. He sees the trout dart from bank to bank in the brook and is amazed at its magical powers, and from admiration he often proceeds to adoration. He sees the serpent glide over the rock, swift without feet and having the sting of death in his mouth; in this respect he seems superior to man. He sees the chameleon gliding along the boughs of trees in sport with rainbow hues, and is delighted with its magical skill. He sees the eagle sail from the cliff to the cloud region, at home in wonderland. He sees the lion walk forth to conquer with occult majesty. Yes, all the animal world is magical, and men are but degenerate animals. Inspired with wonder, he is filled with adoration, and the beasts are gods. The world is thus the home of men and gods, and the gods are the beasts.

A mythology has sprung up with every primordial language. These languages are found to be many—how many we do not know, but certainly there have been many thousands, and with every tongue a mythology has been developed. The tribes of mankind scattered over the whole habitable earth between the polar walls of ice, living in small clusters, every one having a distinct language and pouring out the generations that have peopled the earth, have created a host of imaginary or mythic bodies.

One of the methods of reasoning by means of which monsters are produced is to impute to one property that which is due to another. Water is transparent and water reflects the light. These two facts are universally observed in savagery. It is something with which men are familiar as an experience growing from day to day and from hour to hour. There is another fact with which they are almost as well acquainted, namely, that the eye is transparent, and also that it reflects images. The eye is the organ of sight, and it is not strange that the power of vision should be referred to transparency. The reflection of light is an unknown and undreamed property, but transparency is well known, and images are well known, and images appear in vision. Thus, with the Zuñi Indians, as with many of the tribes in North America, the property of transparency is esteemed as vision: all water sees, and the dewdrop is the eye of the plant. It is long before it is learned that transparency is a structure which transfers a motion, while vision is a mentation. Thus force as reflection and vision as mentation are explained as transparency.

The mythology of the Amerinds is replete with myths concerning the powers of thought. There is no error more common than that of confounding thought with force. When the savage theurgist tells us that his hero can think arrows to the hearts of his enemies he makes this mistake. So it is believed that there are mythic men who can think their boats over the river; they can think themselves to the topmost branches of high trees; they can think rocks onto the heads of their enemies. There is no myth more common than this one of confounding thought with force, and there is no myth that has a more venerable history. No Egyptian king has received higher honors, for it is embalmed in the cerements of learning.

We now know that heat is a mode of motion and that cold is a low degree of heat; in the same manner we know that color is a mode of motion, and we measure the number of vibrations in the ether which occur in a unit of time that it requires to produce a variety of color.

The love of knowledge is the most delightful plant in the garden of the soul. In the individual the failure to make correct judgments entails innumerable evils, while correct judgments lead to good. Judgments directly or indirectly lead to action, and that action is wise as judgments are wise. Every hour, almost every moment of the day, brings the lesson that knowledge is advantageous, and these lessons are repeated by every individual in every generation. Thus there is an acquired and hereditary love of knowledge. Mental life presents a vast succession of judgments, some correct, others incorrect, and as they come they are enwrought in notions that inspire activities, and by these activities the notions themselves are adjudged. Those notions that stand the test are held fast, those that fail are cast away, for men love the true and hate the false. All of this is so evident that it seems commonplace, and yet we are compelled to account for the intensity with which men cling to mythology.

The repetition of a judgment is sometimes a valid confirmation, but it is often the bulwark of fallacy. Judgments many times repeated become habitual, and habitual errors are hard to eradicate, for they are venerable. Errors associate in communities; as they dwell in the mind they constitute a fraternity for mutual protection. Assail one notion with the club of incongruity and a host of notions arise in its defense. Perhaps this will fully explain the fact, which we are to consider, that men invent arguments to sustain myths. He who contemplates this state of affairs may readily fall into despondency, for there seems to be as much mental activity occupied in the invention of false reasons as in the discovery of truth; but on further contemplation it is seen that science has an advantage in that its gains are constant and imperishable, while the gains of error overstep themselves and sooner or later exhibit new incongruities and hence are self destructive.

The appeal to antiquity is the appeal to habit, and the appeal to habit is the appeal to repetition, which must always be distinguished from the appeal to verification. The argument from antiquity is a two-edged sword, and may be an instrument of suicide; but it is the first argument used to support a myth. "It was taught by our forefathers" is inscribed on the banner of mythology. But can we not use the argument from experience? Yes, if we distinguish the method of verification from the method of repetition. This is our only criterion.

Myths are defended by another argument which must now be set forth. It may be called the argument from intuition. Plants grow from seeds; animals from eggs. The development of the individual from the germ is called ontogeny. The process of ontogeny has been well recognized from primordial human time. Germs also develop from generation to generation. The acorn is a very different seed from that of the plant from which oaks were developed. The egg of the bird is a very different germ from that of the egg from which it was developed through successive generations. This development of germs is also called the development of species. The process is now well known to science, but it was long unrecognized except in a vague way. The process is called phylogeny. Ontogeny and phylogeny together are termed evolution. While ontogeny was more or less fully recognized in antiquity, phylogeny was very dimly discerned and it was supposed to be exceedingly restricted; so that while there might be varieties of plants and animals, it was held that all living creatures are encompassed by barriers beyond which they cannot pass. It could be observed that plants and animals grow from germs, but that races grow by minute modifications of germs accumulating through many successive generations was not so easily observed. That the offspring is like the parent is a more conspicuous fact than that the offspring is a modification of the parent. Therefore it was believed that every existing species is the descendant of a primal species, and the number of primal species has remained constant. Finally it was discovered that species become extinct and that species begin at different periods in the world's history; this was revealed by the science of geology. Thus the notion of constancy of species was finally shown to be erroneous, and it has been replaced by the scientific concept of the evolution of species.

So much of what is now commonplace science must be given that we may understand the doctrine of primordial intuition, which was invented as a defense of mythology. As plants grow from seeds by minute increments through the process of ontogeny, and seeds grow from other seeds by minute increments by the process of phylogeny; as animals grow from eggs by minute increments, and as eggs themselves grow from other eggs by minute increments, so ideas grow ontogenetically by minute increments of judgments and also phylogenetically by minute increments of judgments. Thus the notion grows in the mind of the child by ontogeny, and the idea grows in the mind of the race from generation to generation by a process analogous to phylogeny. As man once believed that plants are inexorably limited to specific forms that are constant, as he once believed that animals are limited to specific forms that are constant from generation to generation, so men have believed that ideas are limited to specific forms that are constant. That which in plants and animals was called the limitation of species, in ideas was called intuition, and by that term was meant the limitation of certain specific ideas. It was recognized that ideas grow or develop in the individual, but it was denied that they develop in the race. Sometimes it was conceded that ideas or concepts grow phylogenetically, that is, they are developed in the race; but it was held that there are certain fixed limits to ideas or notions which cannot change, these limits being fixed primordially in the mind. Now, there have been many modifications and many phases of this doctrine which we cannot here elaborate, but that which is essential to all forms of the doctrine of specific innate ideas has been set forth.

We must now see how this doctrine is used to shore up mythology.

Venerable errors are supposed or affirmed to be universal and also to be innate—that the notions which they involve have been preserved from primordial time, and that they were given to man at his creation when all species were created. This doctrine of primordial specific innate ideas is one of the most important themes of scholastic learning. Born in savagery, flourishing in barbarism, it is believed in civilization, and its exposition ultimately becomes one of the tests of scholarship. When the doctrine had reached this stage, so-called philosophers or mythologists attempted to defend these primordial concepts. This attempt culminated in the *Critique of Pure Reason.* This defense of mythology by Kant led to the usual result; he, or at least his followers, supposed the argument to be exhausted and the question of innate ideas set at rest when it was stated anew as innate forms of ideas. A calmer generation discovered the incongruity of this doctrine with the concepts of evolution born of science. While the doctrine remained vague, these incongruities were not so apparent; but when it came to be carefully formulated, it was doomed. It may be claimed that the doctrine of the evolution of concepts by experience in the race as in the individual is established.

Primarily judgments are formed as guides to action. In this first stage erroneous judgments are detected by the test of action. If the action proves unwise, the judgment is wrong; but as judgments multiply and are compounded in notions, a new test of error is developed, which is the incongruity of notions. But the discovery of incongruity is not the discovery of the specific error. The incongruity is a relation between two or more notions; some one of these notions must be erroneous, but which one is not revealed by the incongruity. The error is discovered only by submitting the judgments to trial by verification. The incongruity does not reveal a particular error, but only the fact that some error exists; on the other hand congruity does not prove validity.

Mythologic notions may well be congruous with one another. There is no incongruity between the notion of the thunder-bird and the notion of the wind-bird. If there is a bird which roars in the heavens, there may be a bird which breathes in the hurricane:

the one notion serves to confirm the other. It is strange how congruous mythic notions are with one another. Study the mythology of any people as a system, and you will be surprised at the congruity of the notions which it reveals. Compare one mythology with another, and often they will be found strangely antagonistic. This congruity of mythic concepts in one system is a fact so conspicuous as to challenge the attention of thinking men, and it is early discovered and widely used alike in savagery, barbarism, and civilization.

This method of reasoning from the congruity of notions was finally developed in early civilization into a body of doctrine called dialectic. By this doctrine any mythic notion could be expounded as a starting point and other mythic notions brought into judgment before the one selected and found to be congruous, and by this logic proved correct. Proceeding in this manner from notion to notion, many are verified, and the assumed original notion is in this same manner found valid. It is thus that a special system of reasoning in the interest of mythology is gradually developed.

If this system of logic were not already named, I should be tempted to call it Kanosh logic. Kanosh was the chief of a Shoshonean tribe in the central part of Utah, where cinder-cones and lava-beds are found. In years of my youth I was wont to sit at the feet of the venerable Kanosh and listen to mythic tales. Once on a time he explained to me the origin of the cinder-cone and the scarcely cooled lava which in times past had poured from it. He attributed its origin to Shinauav—the Wolf god of the Shoshonean. When I remonstrated with him that a wolf could not perform such a feat, "Ah," he said, "in ancient times the Wolf was a great chief." And to prove it he told me of other feats which Shinauav had performed, and of the feats of Tavoats, the Rabbit god, and of Kwiats, the Bear god, and of Togoav, the Rattlesnake god. How like Aristotle he reasoned!

There is a phase of the defense of mythology which must not be neglected, although its contemplation is a source of sadness because it is an exhibition of the worst traits of mankind. It has already been seen that in the defense of mythology subtile arguments are produced, systems of psychology are born, and methods of logic are invented. The notions of mythology are not only woven into theories of institutions, but institutions are devised for their propagation and defense.

Institutions are founded in the natural conditions for family organization. The love of man for woman and the love of woman for man, together with the love of parents for children and children for parents, are all involved; thus institutions have their origin in domestic love. The social life which develops from this germ, having its roots in domestic love and sending its branches into all the ways of life, constitutes the sheltering tree to protect mankind from the storms of foreign war and internal conflict. Peace, equity, equality, liberty, and charity are concepts at the foundation of institutions. An attack upon institutions is thus an attack upon all these sacred principles, so man defends them to the last extremity. On the other hand, men are constantly seeking to improve them, and that which is beneficent to one may be malign to another. When the tendrils of mythology are entwined in the branches of institutions, the attempt to substitute science for myth often appears to be an attack upon the institutions in which it is entwined, and thus the reformer and the defender come to blows. When the defender of venerable mythology is also the defender of ancient institutions, he is easily convinced that his warfare is holy. When he is the constituted and official defender on whom the armor is buckled and by whom the sword is grasped, he is watchful and ready for the fight. Then his honor is at stake and his emoluments threatened.

One element of this controversy — the saddest of all — is the passion for thaumaturgy which mythology produces. Then unknown beings with occult attributes people the world, and the air reeks with mystery. Men who deceive themselves are deft in the deception of others. The love of thaumaturgy becomes one of the monster passions of mankind that stifles the pure love of truth. When thaumaturgy becomes a source of gain, and greed is wed to wondercraft, there springs from the union a progeny of devils that wreak on the teachers of truth the tortures of rack and fagot.

In savagery names are believed to be natural attributes of the objects which they signify. The many significations which the same word may have are usually related to one another, but even when they are not related they are so habitually associated that affinities are constantly suggested. The development of science to an important degree depends on the distinct recognition of different meanings, and in order that scientific reasoning may proceed it is always found necessary to define words with exactness and to adhere to constant meanings; but mythological reasoning does not observe these precautions, and often succeeds in making its arguments plausible by the uncertain use of words. It must not be supposed that this is a device on purpose to deceive, for it is often a potent agency of self-deception.

Trope is not an unmixed evil, although it is a dangerous device. When knowingly used and legitimately derived it adds power and vigor to language, and we have already seen that it is a necessity in nascent knowledge. Ultimately it becomes the foundation of the highest fine art known to man, for it is an essential element in poetry; but that which is legitimate and useful in poetry is the bane of scientific reasoning, especially when it is used without comprehension. Mythology is thus eminently tropical. While it is held as science, its tropes are believed; when its incongruities are discovered and its tropes recognized, mythology is often supposed to be a crude poetry. When dialectic methods of reasoning prevail, equivocal or duplicate meanings of words are common. At last mythologic reasoning discovers the advantage to be derived from the use of words with many meanings, and it becomes an essential and recognized element in such reasoning. Hegel, who is a master of dialectic, not only lapses into many equivocal meanings, but purposely uses them and boasts of the advantage to be derived from his native tongue by reason of the many meanings which its words present. His first great work, *The Phenomenology of Mind*, is esteemed by him and by his followers as the effort by which the foundation of his philosophy was laid. When this work is read paragraph by paragraph and the meanings of words compared throughout the entire book, it will be found that the argument depends on the equivocal use of words. One can imagine the delight with which he hailed the discovery that he could make an attractive argument and a chain of seemingly invincible reasoning in this manner. His followers have claimed for him some profound secret, but with this key to the Hegelian riddle it is easily read.

METAPHYSIC

Metaphysic is a system of explaining how the essentials of bodies are generated one from another.

Pythagoras taught that unity as number is the primordial essential from which others are derived, the conception being in the spirit of tribal cosmology in which all things are generated or begotten by parents.

Plato considered extension as form to be the primordial property. He exalted mind perhaps more than any philosopher before his time, and with transcendent literary skill sounded its praises. But as he considered form to be the property from which it was derived, he translated mind into terms of form and thus succeeded in imposing upon all coming time the word for form as the term signifying notion or concept. Thus idea, which primarily signified form, is now a term of mind.

Aristotle seems to have considered force as the primal property from which all other properties are derived, for thus I interpret his doctrine of energy. Certain it is that since his time there have been metaphysicians who have held this doctrine. Perhaps this error has more widely prevailed than any other doctrine of the genesis of the essentials. Aristotle's theory of mind is vague, and his reader may easily defend the proposition that he derives energy from mind, rather than mind from energy.

Spencer resolves extension into force, and impliedly, though not overtly, resolves duration into force in his discussion of the doctrine of evolution; and finally he resolves mind into force, so that Spencer is the modern champion of this theory. Of course Spencer does not consider the derivation to be parental genesis, but genesis by evolution. The American philosopher of this school, Mr Lester F. Ward, also derives mind from force by evolution.

Still other philosophers have taught that persistence is the primal property, from which all others are derived. This philosophy has been taught as a reification of being, and is known as *ontology*. The term "being" signifies existence, but it is also used in Aryan languages as the common asserter. This double use has always been found in ontology. The prevalent philosophy of medieval time was ontology. Being is not held to be the father of properties, but rather the substrate.

Idealism is the doctrine that the other properties are produced by mind, the foundation of which is consciousness. It began with Berkeley and has been elaborately formulated in the German of Kant, Fichte, Schelling, and Hegel. Mind is reified, and the physical world has its genesis in the human mind, or, as some think, in the mind of God who endowed the human mind with faculties to think his thoughts as he thought them in creation. The physical world is thus an illusion called phenomenon, the reality being noumenon or thought. Two schools of idealists are found—one speaks of noumenon as mind, the other as will. In one school mind is the only substance, in the other will is the only substance.

The essentials with their relations, quantities, properties, and qualities have severally given rise to a system of metaphysic. As we have called them they are the system of Pythagoras, the system of Plato, the system of Aristotle, the Medieval system, and the system of Berkeley. The last system, when will is substituted for mind, may be called the system of Schopenhauer, as a variety of the Berkeleyan system, which also has many other varieties.

We are now prepared for a definition of metaphysic: Metaphysic is the doctrine that one of the essentials of a particle or body is primordial, or the one from which the others are derived. They may be derived by parental genesis, as in ancient metaphysic; by evolution, as in modern materialism; or by creation, as in idealism.

The Pythagorean and the Platonic systems have perished from the earth. The idealists claim that Plato was the founder of their system, and that Aristotle was also a believer in it. Thus they interpret these two Grecian metaphysicians, as I think, erroneously. The medieval system is waning, though it may have some disciples; but apparently they have become idealists. There yet remain to us the Aristotelian and the Berkeleyan. The Aristotelian has been revived by Spencer, greatly expanded and placed upon a clearer foundation; Spencer has many illustrious disciples. Idealism in some one of its many forms prevails widely among metaphysicians. Enlisted among its disciples are many scholarly men who take a leading part in the metaphysic of the schools. They have usually not occupied themselves with the physical sciences, but there are some illustrious exceptions. The Aristotelian system, especially as revived by Spencer, is usually called *materialism*. Materialism and idealism are now rivals in the metaphysical world.

Materialism is a theory of the existence of the world as constituted of forces. This theory is perhaps best expounded by Boscovich as points of motion, not points in motion; centers of motion, not centers in motion. There are no atoms or molecules in motion, but there are atoms and molecules of motion; there are no stars in motion, but stars of motion; there are no waters or gases in motion, but there are gases of motion; there are no rocks in motion, but there are rocks of motion; there are no plants in motion, but there are plants of motion; there are no animals in motion, but there are animals of motion; there are no thoughts that are the motions of brain particles, as there are no brain particles, for thoughts are motions themselves.

Oftentimes idealism is a theory that all the material objects of the universe, other than human beings, are created or generated by mind, and that human beings are the real things and all other things are but the concepts of human beings. There are no stars, but only human concepts of stars; there are no waters, but only human concepts of waters; there are no rocks, but only human concepts of rocks; there are no plants, but only human concepts of plants; there are no lower animals, but only human concepts of lower animals. God and human beings are realities which manifest themselves to one another in perception and conception as ideas in the objective world.

Sometimes it teaches that science is a method of expressing ideas; it is but a system of language and has no other significance than that of a system of language. There is no objective concrete world with which science deals; but there are ideas with which science deals, and the whole function of science is to reduce these ideas to their simplest expression. There is no objective standard of truth; there is only a subjective standard of opinion, and all scientific research is the attempt to formulate these opinions or ideas or concepts or perceptions in universal terms. Science is only a device of language; mathematics is only a device of equations; chemistry is only a device of atoms; astronomy is only a device of worlds; geology is only a device of formations; botany is only a device of cells; biology is only a device of organs. All of these devices are useful for linguistic purposes; they do not express objective reality, but only subjective ideas. The world is a realm of ideas and words; it is not a realm of objective real things!

Idealism accuses all scientific men of being materialists, and it divides mankind into two groups—the good and the evil. The good are idealists, and the evil are materialists. The idealists are from heaven and the materialists are from hell. Idealism accuses materialism of ignoring all values in the world; it forever seeks to belittle scientific research. Chemistry is only a controversy about words; astronomy is only a disputation about words; physics is only a disputation about words; geology is only a disputation about words; botany is only a disputation about words; and zoölogy is only a disputation about words!

Materialism accuses idealism, as being the enemy of science, of rejecting every scientific discovery until it can be translated into terms of idealism, being the great bulwark of ignorance and the fortress of superstition. As idealism is interpreted by materialism, the accusations are true; and as materialism is interpreted by idealism, the accusations are true. Materialism is arrayed against religion, and idealism is arrayed against science.

Idealism is a theory that there is no objective reality, or, to use the language of modern idealism, there is no trans-subjective reality. Symbols are signs of ideas, but not signs of objects. The objective world thus becomes the creation of thought. The apparent or phenomenal objective world is created magically by thought. There are no stars as objective realities; there are only stars by the magic of thought. Astronomy is not a science of orbs which depends on the existence of objective realities; but it is a science of words which depends on our concepts, and contributions to astronomy are only contributions to language and consist only in a better method of using symbols as words to describe our concepts. There are no atoms or molecules or substances as science teaches; but there are concepts of atoms, molecules, and substances, and all contributions to chemistry are but contributions to language by which symbols that do not represent reality, but only concepts, are made more useful as linguistic devices. There is no such thing as motion; motion is but the product of thought. We think there is motion, but it has no objective reality, and contributions to dynamics are only contributions to language!

During the last decade Ladd has published a volume, titled *What is Reality ?*, in which he sets forth in a masterly manner the concomitancy of the categories. In this great work he treats of the fundamental elements in the fallacies of materialism and idealism, and the metaphysicians of both schools must reckon with him before again stating their systems.

The stream of thought is a succession of judgments, and judgments are made of essentials; hence we cognize by essentials. Judgments are made instantaneously, hence our judgments are infinite, as that term is used in mathematics; they are so multitudinous that we cannot enumerate them in statable quantities. Judgments are repeated again and again and thus become habitual, when the objects of judgment are again presented or represented. These abstract judgments are concreted or integrated; for when a judgment is made of one essential, the others are implicated, posited, or presupposed; thus judgments become vicarious. If I judge that a body is one I implicate that it has extension, speed, persistence, and consciousness.

No particle or body can exist without all of its essentials, for they are concomitant. This fact is a refutation not only of materialism and idealism, but of all metaphysical systems.[1]

In metaphysic qualities are not discriminated from other categories. The same number is few or many from an ideal or an adopted standpoint of consideration. The sands of the lake are many compared with the sands of the pond, but the sands of the lake are few when compared with the sands of the sea. The stars of the Milky Way are many compared with the stars of Orion; the stars of the Milky Way are few compared with all the stars of the firmament. So forms are large or small from artificial standpoints. Structures are simple or complex in the same manner. Forces are strong or weak with different purposes in view; times are long for the same reason, and causes are trivial or potent.

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[1] For the demonstration of the concomitancy of essentials, see my volume *Truth and Error*.

Judgments are wise or unwise when the view comes, and the wisdom of yesterday is the folly of today. Men have distinguished but slowly between qualities and other categories, and there has always been a tendency to explain unknown categories as qualities, for often they have been dwelt upon before their corresponding categories were known. In the ordinary course of human reason the first incentive to an investigation of the other categories is derived from a knowledge of their qualities, and so long as they are unknown they are believed to be only qualities.

It is this characteristic of qualities that seems to give warrant to idealism. Qualities always change with the change in view, and they are ideal when we consider things with relation to purposes. You can always discover that idealists consider only qualities among the categories, and confuse all others with them. Even while I am writing this statement there comes to hand a new work on idealism, titled *The World and the Individual*, by Royce. On every page of this book he considers qualities and only qualities. On page 209 he says:

> Those other objects of common human interest are viewed, by common sense, namely, not as Independent Beings, which would retain their reality unaltered even if nobody ever were able to think of them, but rather as objects such that, while people can, and often do think of them, their own sole Being consists in their character as rendering such thoughts about themselves objectively valid for everybody concerned. Their whole *esse* then consists in their value as giving warrant and validity to the thoughts that refer to them. They are external to any particular ideas, yet they cannot be defined independently of all ideas.
>
> Do you ask me to name such objects of ordinary conversation? I answer at once by asking whether the credit of a commercial house, the debts that a man owes, the present price of a given stock in the stock market, yes, the market price current of any given commodity; or, again, whether the rank of a given official, the social status of any member of the community, the marks received by a student at any examination; or, to pass to another field, whether this or that commercial partnership, or international treaty, or still once more, whether the British Constitution,—whether, I say, any or all of the objects thus named, will not be regarded, in ordinary conversation, as in some sense

real beings, facts possessed of a genuinely ontological character? One surely says: The debt exists; the credit is a fact; the constitution has objective Being. Yet none of these facts, prices, credits, debts, ranks, standings, marks, partnerships, Constitutions, are viewed as real independently of any and of all possible ideas that shall refer to them. The objects now under our notice have, moreover, like physical things, very various grades of supposed endurance and of recognized significance. Some vanish hourly. Others may outlast centuries. The prices vary from day to day; the credits may not survive the next panic; the Constitution may very slowly evolve for ages. None of these objects, moreover, can be called mere ideas inside of any man's head. None of them are arbitrary creations of definition. The individual may find them as stubborn facts as are material objects. The prices in the stock market may behave like irresistible physical forces. And yet none of these objects would continue to exist, as they are now supposed to exist, unless somebody frequently thought of them, recognized them, and agreed with his fellows about them. Their fashion of supposed Being is thus ordinarily conceived as at once ideal and extra-ideal. They are not "things in themselves," and they are not mere facts of private consciousness. You have to count upon them as objective. But if ideas vanished from the world, they would vanish also. They then are the objects of the relatively external meanings of ideas. Yet they are not wholly separable from internal meanings.

Well, all of these facts are examples of beings of which it seems easiest to say that they are real mainly in so far as they serve to give truth or validity to a certain group of assertions about each one of them.

Yes, if ideas were to vanish from the world, qualities would vanish also.

What, then, are qualities; and can we define them? Qualities are attributes of good and evil. This definition is perfect, for it is inclusive of all and exclusive of others. All that has been written in this series of articles is designed to set forth their nature. Qualities naturally fall into five groups: There are esthetic qualities, or qualities of pleasure and pain; there are industrial qualities, or qualities of welfare and illfare; there are institutional qualities, or qualities of morality and immorality; there are linguistic qualities, or qualities of truth and falsehood; there are sophiological qualities, or qualities of wisdom and folly.

Those attributes which we call qualities are always found in antithetic pairs. All human activities are performed for purposes, and these purposes are either good or evil; no purposes can be neutral. Hence we see that purposes play a role of transcendent importance *in human affairs.* Notwithstanding this, there are other categories of reality in the universe, but personal interest in qualities masks them from the consideration of the metaphysician.

If there has been one cause for the longevity of myths more potent than another, it has been the doctrine of phenomenon and noumenon as it is held in metaphysic. How often have men erred in judgment when brought to the test of action! What multitudes of judgments have pròved to be erroneous by the test of experience through verification! When men contemplate the mistakes made in every hour of waking life; when men contemplate the hosts of erroneous notions that they have entertained, when they realize that the result of thought is mainly the reconstruction of notions, it is not strange that men should despair of all certitude and cry, "We know not reality, but only appearance!"

Aristotle formulated the laws of disputation as laws of thought itself, and so the logic of scholasticism is but the logic of controversy. When men compared theories of the universe, they found that any theory could be maintained with plausibility because they yet remained ignorant of the laws of verification; it was not strange that a sense of illusion seemed to pervade the universe. Thus the metaphysical doctrine of phenomenon and noumenon is seemingly confirmed.

SCIENCE

It would be a pleasing task to outline the history of science. Science is as old as error. Although human fallacies began with primordial man, knowledge also began with primordial man, and the two have grown together. Science has more and more prevailed, and error has more and more succumbed to its power. As the errors of animism, mythology, cosmology, and metaphysic have been overthrown, there are many who still entertain them, and scientific men have come to call all of these errors folklore, and folklore itself has come to be the subject-matter of science.

The study of folklore is the study of superstitions. Superstitions are opinions which stand over from a lower into a higher state of culture.

There are people who can move their ears at will; the lower animals can do this, but only a few human beings can wink their ears. Organs that are useful in lower species may remain in an imperfect and practically useless state in a more highly developed species; they are then called vestigial organs. As there are vestigial organs, so there are vestigial opinions. These vestigial opinions are commonly called superstitions. When we come to investigate vestigial opinions and treat them as objects of science, we no longer call them superstitions, but we call them folklore.

The science of folklore may be defined as the science of superstitions, or the science of vestigial opinions no longer held as valid. Yet such erroneous opinions that hold over from the days of greater ignorance to the era of modern scientific research are found to be of profound interest in the revelations which they make of the nature of superstitions themselves. We might neglect them, or seek to substitute for them valid opinions. However, science does not hesitate to investigate any question, and even the natural history of superstitions has come to be a profoundly interesting and instructive science.

Some years ago a movement was made in Europe and America to investigate superstitions themselves on the theory that they are valid. Societies were organized in London, Paris, Berlin, and Boston for the purpose of determining whether or not there is substantial truth in error itself. This is the function of the Societies for Psychical Research, the purpose of which is to discover the truth of dreams, the validity of necromancy, and the reality of ghosts. I have a suspicion that the Societies for Psychical Research are rather instrumental in increasing superstitions than in dispelling them, and that we reap the natural fruit of these researches in the increased prevalence of such abnormal cults and arts as christian science, mind-healing, spirit-rapping, and slate-juggling. Be this as it may, there is one result growing out of the modern Societies for Psychical Research which I hail with pleasure: In the transactions of these societies there is put on record a great body of superstitions, all of which are valuable material as folklore.

Remember it is the science of superstitions, and the science must deal with the fundamental errors of mankind (as the phenomena of nature have been interpreted by savage and barbaric peoples), and how these errors as vestigial phenomena have remained over in civilization and are still entertained. Of course the ignorant entertain them by wholesale; but it is not the ignorant alone who entertain superstitions. Superstitions are domiciled in many parlors, they are paraded on many platforms, they are worshipped in many temples, and they lurk even in scientific halls and appear in scientific publications and are taught by scientific men. There is much folklore in this world, and sometimes it may be found in strange company.

It is thus that the study of folklore reveals the origin and nature of superstitions and makes the grand scientific distinction between valid concepts and uncanny visions.

The habit of believing in the impossible, of expecting the absurd, and of attributing phenomena to the occult, gives rise to two classes of magical agencies which, from savagery to the highest stages of culture, have played important roles in the explanation of magic. These are the beliefs in mascots and taboos.

Those who dwell on the mysteries of life, especially as they are revealed in ecstasy, hypnotism, intoxication, and insanity, are forever looking for mascots or mysterious causes. Such occult agencies are sweet morsels to superstitious people, just as scientific men delight in the discovery of scientific facts. What a wonder it was to scientific men to discover that bones could be photographed through their covering of flesh! The discovery of the Röntgen rays was held to be so important that the discoverer was awarded a great meed of praise. But the potency of the left hind-foot of a graveyard rabbit plucked in the dark of the moon is held by superstitious people to be of more importance than the Röntgen rays. More people believe in mascots than believe in telephones, and those who believe in mascots believe that telephones are magical. In the same manner taboos perform wonderful magic feats in the notions of many persons. In savagery there are many taboos, and men must not do this thing nor that thing lest their enterprise should fail. Survival of taboos still exists; *e.g.*, thirteen persons must not sit at the table lest one should die. So mascots and taboos still have their influence in civilized society.

INSTRUCTION

Having set forth the nature of the opinions held by mankind in different stages of culture, and the way in which science supplants superstition through the agency of verification, it yet remains for us to characterize the agencies by which opinions are propagated. This gives rise to the fifth great system of arts, the last in the pentalogic series: the arts of *sophiology*. A brief characterization will be sufficient for our purposes.

Sophiology is the art of instruction.

Nurture

It is found that in organized society man has developed five distinct agencies for instruction. In infancy parents instruct their children. As children advance in age, other members of the family take part in the work; and still as the child advances in years, his associations are enlarged and all of those persons who constitute his social environment take part. Instruction of this character is well recognized under the term *nurture*.

ORATORY

In tribal society an important agency of instruction is found in oratory. Every patriarch of a clan, every chief of a tribe, every shaman of a brotherhood, every chief of a confederacy, must be an instructor of his people. This instruction is necessarily conveyed by oratory; hence in tribal society a comparatively large number of persons are spokesmen or official orators. In the frequent assemblages of the people by clans, tribes, phratries, and confederacies abundant opportunity occurs for the exercise of this office, and when important matters are up for consideration in the council, every man has a right to a voice, and his influence in the tribe depends largely on his powers of persuasion as an orator. Oratory is therefore very highly developed in tribal society. At the dawn of ancient civilization the Greek philosophers employed this method of conveying instruction. In national society there is still opportunity for oratory in the more highly developed council of state.

There are other occasions for oratory. There still remains a field for the employment of oratory in religion, for the religious teacher must be an orator, and one day in the week is set apart for religious instruction. The method of instruction by this means has a long history, and through it mankind have received a large share of their instruction, although in modern times it has been employed chiefly in teaching morals.

EDUCATION

In modern society a distinct agency is organized for the instruction of youth in addition to those included under the terms nurture and oratory. This new instruction is *education*.

In the highest civilization the years of adolescence, and sometimes of early manhood, are consecrated to education, so that much of the time of individual life is occupied in this manner. A multiplicity of schools is organized, a host of teachers are employed, buildings and apparatus are used, so that the cost of education is rapidly advancing *pari passu* with the growing appreciation of its importance. The theory and art of education are undergoing rapid development. We may contemplate with surprise the development of manufacturing interests; we may gaze with wonder at the development of the agencies of transportation; we may consider with profound interest the development of commerce and the modern agencies upon which its highest stages depend, but the wonder of wonders is the development of modern agencies of education. As human muscle is supplanted by electricity, the tallow dips by the incandescent light, the coin by credit, so the text-book is supplanted by the library, the teacher's rod by the instructor's illumination, and the memorized word by the informing idea.

Publication

In early times many manuscripts were written and important ones were often copied, but altogether this method of multiplication was infrequent. A new civilization began with the events and discoveries that came upon the world about the time of the discovery of America; in this epoch the art of printing was invented, through which was developed a new system of instruction which has already become universal in civilized society and whose potency for progress can hardly be underestimated. This new system is publication. Books and periodicals constitute the fourth great agency of instruction.

Research

Research is the potent agency for the development of new opinions. Aristotle is credited with organizing research. Intermittent and feeble research extended from his time on until the epoch of modern civilization. The discovery of America signalizes the beginning of this epoch. Prior to this time research was dangerous; the propagation of new truth was held to be impiety to the gods, old opinions were held to be sacred, and terrible punishment was the reward of him who taught new truths to the world. Prior to this time even the discoveries in astronomy were held by men only in secret, and the flat earth with a revolving sun was the sacred opinion. When the New World was discovered it was so brilliant an example of the results of the belief in a scientific doctrine that science itself was exalted and the scientific man could hold up his head and walk the earth the peer of all men. Since that time research has been organized in many fields and hosts of men have become votaries to research, and now the fifth great sociologic agent is firmly established among the institutions of civilization.

We thus have Nurture, Oratory, Education, Publication, and Research as the five grand arts of Instruction.